

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GEORGE H. BUABBUD AND MUNEEB ZUHDI

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Appeal 2006-2973  
Application 09/540,955  
Technology Center 2600

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Decided: March 21, 2007

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Before JOSEPH F. RUGGIERO, JOSEPH L. DIXON, and MAHSHID D.  
SAADAT, *Administrative Patent Judges*.  
SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 3, 4, 6, 7, and 10-21. Claims 1, 2, 5, 8, and 9 have been canceled.

We reverse.

## BACKGROUND

Appellants' invention is directed to bidirectional telephony communications using two different codes such as NRZ (non-return to zero) and Manchester coding for upstream and downstream transmissions. An understanding of the invention can be derived from a reading of exemplary independent claim 21, which is reproduced as follows:

21. A method of transmitting bidirectional communication data over a single optical fiber comprising the steps of:

transmitting a first NRZ data stream having a first clocking frequency from a first location to a second location by said optical fiber using a carrier having a selected wavelength of light;

receiving said selected wavelength of light from said first location at said second location and recovering said NRZ data stream;

receiving a second NRZ data stream having said first clocking frequency at said second location;

converting said second NRZ data stream to a Manchester coded data stream at a second clocking frequency which is a selected multiple of said first clocking frequency;

transmitting said Manchester coded data stream from said second location to said first location by said optical fiber at said selected wavelength of light;

receiving said Manchester coded data stream at said first location; and

converting said Manchester coded data stream to an NRZ data stream having said first frequency.

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The Examiner relies on the following references:

Fellows	5,459,607	Oct. 17, 1995
Neidlinger	5,491,575	Feb. 13, 1996
Kim	5,719,904	Feb. 17, 1998
Watanabe	5,896,211	Apr. 20, 1999

Claims 3, 4, 6, 7, and 12-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fellows, Neidlinger, and Kim.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fellows, Neidlinger, Kim, and Watanabe.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fellows and Neidlinger.

We refer to the Briefs and the Answer for the respective positions of Appellants and the Examiner.

#### OPINION

In rejecting claim 21, the Examiner relies on Fellows for disclosing the claimed features except for transmitting a first NRZ data stream in a first direction and on Neidlinger for transmitting NRZ coded data in one direction and PSK modulated signal, which is equivalent to a Manchester signal, in the other direction (Answer 3-4). The Examiner further asserts that since NRZ and Manchester signals have little overlap in frequency spectrum, it would have been obvious to one of ordinary skill in the art to use different coding for each direction in Fellows in order to reduce crosstalk (Answer 4). Appellants assert that there is no suggestion for modifying the transmission

of Manchester coded data in both directions in Fellows with Neidlinger's use of NRZ in one of the directions when Fellows criticizes using NRZ coding and Neidlinger teaches against using the same wavelength in both directions (Br. 12-17; Reply Br. 14-18). Therefore, the main point of contention is based on whether the combination of Fellows with Neidlinger is properly suggested and the combination discloses all the claimed features.

As a general proposition, in rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. *See In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) and *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). A prima facie case of obviousness is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art. *See In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993); *In re Fritch*, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992); *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985).

After reviewing Neidlinger, we agree with Appellants that the reference teaches against using the same wavelength in both directions (col. 1, l. 44-49) and provides for a wavelength-division multiplexer to avoid such problem (col. 1, ll. 62- col. 2, l. 6). Fellows, on the other hand, overcomes the noise problem associated with low and high frequency NRZ transmission

systems (col. 1, ll. 46-58) by using Manchester coding in both directions over two different clock frequencies (col. 2, ll. 33-39).

What the Examiner characterizes in Figure 2 of Fellows as non-overlapping frequency spectrum for NRZ and Manchester coding (Answer 8) and the reason for combining the two references is not recognized by Fellows and appears to be motivated by Appellants' claimed invention and based on hindsight. In that regard, we find that Fellows uses Manchester coding instead of NRZ to avoid overlapping spectrum shown in Figure 2 (col. 1, ll. 46-58) and to remove the effect of the skewed power curve with respect to the center frequency (col. 2, ll. 33-39) associated with NRZ coding.

The Board's findings must extend to all material facts and must be documented on the record, lest the "haze of so called expertise" acquire insulation from accountability. *In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002). Here, we find the Examiner's position to be merely stemming from the Examiner's own expertise instead of being supported by the evidence of record and the teachings of prior art which are required in order to establish a prima facie case of obviousness. Figure 2 of Fellows actually suggests using Manchester coding for both directions in order to overcome the two problems identified in the reference, as discussed above. A rejection based on section 103 must rest upon a factual basis rather than conjecture, or speculation. "Where the legal conclusion [of obviousness] is not supported by the facts it cannot stand." *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967). See also *In re Lee*,

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277 F.3d at 1344, 61 USPQ2d at 1434 and *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

Thus, the teachings of Fellows and Neidlinger fall short of teaching or suggesting bidirectional transmission of data using different data codes at the same wavelength, as required by all of the independent claims. We also note that the Examiner points to no teachings, nor do we find any, in Kim and Watanabe that would have overcome the deficiencies of Fellows and Neidlinger, as discussed above. Accordingly, as the Examiner has failed to set forth a prima facie case of obviousness, we cannot sustain the 35 U.S.C. § 103 rejection of claims 3, 4, 6, 7, and 12-20 over Fellows, Neidlinger, and Kim, of claim 11 over Fellows, Neidlinger, Kim, and Watanabe, and of claim 21 over Fellows and Neidlinger.

#### CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 3, 4, 6, 7, and 10-21 under 35 U.S.C. § 103 is reversed.

REVERSED

KIS

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